

REMARKS

This Response is submitted in reply to the Non-Final Office Action dated March 22, 2007. Claims 1 to 9 are currently pending. Claims 1 to 9 stand rejected and claim 6 stands objected to. With this Response, claims 6, 8, and 9 have been amended. No new matter has been added by these amendments. The Commissioner is hereby authorized to charge deposit account 02-1818 for any fees which are due and owing.

In the Office Action, claim 6 stands objected to under 37 C.F.R. 1.75(c), for being in improper dependent form for failing to further limit the subject matter of a previous claim. Claim 8 stands rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Specifically, the Office Action alleges that claim 8 does not define a computer-readable medium and is therefore non-statutory subject matter. Claims 1, 3, and 7 to 9 are rejected under U.S.C. 102(e) as being anticipated by U.S. Patent Publication No. 20030179083 to Wallace ("*Wallace*"). Claims 1 and 2 stand rejected under 35 U.S.C. 103(a) as being unpatentable over *Wallace* in view of U.S. Patent No. 6,674,893 to Abe ("*Abe*"). Claims 1, and 3 to 5 stand rejected under 35 U.S.C. 103(a) as being unpatentable over *Wallace* in view of U.S. Patent No. 5,901,236 to Mizui ("*Mizui*").

With respect to the objection, claim 6 has been amended such that it now depends from claim 4. Applicants respectfully submit that the objection of claim 6 has therefore been overcome.

Regarding the rejection under 35 U.S.C. 101 for the claimed invention being directed to non-statutory subject matter, Applicants have amended claim 8 such that it recites a computer readable recording medium. Claim 9 has also been amended to include such language. Support for these amendments can be found, for example, on pages 8 to 10 of Applicants' Specification. Applicants respectfully submit that these amendments overcome the rejection under 35 U.S.C. 101 and accordingly request that the rejection be withdrawn.

As to the rejections as being anticipated by *Wallace*, as being unpatentable over *Wallace* in view of *Abe*, and as being unpatentable over *Wallace* in view of *Abe*, Applicants respectfully disagree with and traverse such rejections for at least the reasons set forth below.

Claims 1, 7, 8 and 9 are the sole independent claims. Each of these claims recite, "calculating a difference among 2N consecutive frames, between a sum in recent N frames and

a sum in other N frames for each pixel.” *Wallace* does not teach or suggest this limitation. *Wallace* discloses a vehicle intrusion detection system 10 and a process for using the system as illustrated in Figure 5. See *Wallace*, paragraphs [0035] – [0050]. The process begins with the system 10 activating an illuminator 40 whereby the light emitted from illuminator 40 is reflected off any object in the path of illumination onto pixels 61 of imager 60. The imager 60 then produces an output of the reflected light and the ambient light to produce a signal stored as image #1. See *Wallace*, column 3, paragraph [0037]; Figure 5, steps 86 and step 88. Next, the imager 60 is actuated again such that only the ambient light impinges on the imager 60, whereby a signal of ambient light only is stored as image #2. See *Wallace*, paragraphs [0039] – [0040]; Figure 5, step 92 and step 94. Using a frame differencing process carried out by controller 70, image #2 is then subtracted from image #1 to produce sample #1 of light produced by illuminator 40. Sample #1 is of the light reflected off the object with the effects of the ambient light removed. See *Wallace*, paragraph [0041]; Figure 5, step 96. The above process is then repeated to produce sample #2, which is then compared to sample #1. See *Wallace*, paragraphs [0042] – [0045]; step 96, step 100. If the reflectivity changes by a predetermined amount then the system infers that there is movement of an object into or out of the path of illumination, and thus an intrusion is presumed. See *Wallace*, paragraph [0045], step 100.

Wallace is silent with respect to calculating a difference among 2N frames, between a sum in recent N frames and a sum in other N frames, as called for in each of Applicant’s independent claims. The difference calculator of *Wallace* does not use a summation process. Image #2 is merely subtracted from image #1 to produce sample #1 and the process is then repeated for comparison with another sample. Neither the images nor the samples in *Wallace* are calculated or produced using a sum in recent N frames and a sum in other N frames. Applicants, on the other hand, disclose an image processing apparatus, a method for image processing, a recording medium and a program which capable of monitoring a surveillance area in a more stable manner, each of which uses a difference calculating method employing an equation which subtracts summation values. To be more specific, in one embodiment, the process begins in step S1 of one the control section 112, which controls the floodlight section 111 to produce light. In step S2, the control section 122 controls the driving section 121 such that the image capturing section 112 captures an image of a surveillance area 103. In step S3, the control section 122

controls the signal processing section 124 so that internal storage section 123 obtains an inter frame difference via calculation processing according to the following expression:

$$F(N) = [f(N) + f(N-1)] - [f(N-2) + f(N-3)]$$

where, N indicates the number of a frame, N-1 indicates the number of frames immediately before the frame having the N, N-2 indicates the number of the frame two frames before the frame having the number N, and N-3 indicates the number of the frames three frames before the frame having the number frames N. The values of the signals for the frames are indicated by $f(N)$, $f(N-1)$, $f(N-2)$, and $f(N-3)$. See Specification, page 13, lines 10-25; page 9, lines 4-10; Figs. 7 and 8. This process for calculating a difference among frames using a summation technique such as $[f(N) + f(N-1)]$ or $[f(N-2) + f(N-3)]$ is nowhere disclosed in the vehicle intrusion detection system of *Wallace*.

Neither *Abe*, nor *Mizui* cure the deficiencies of *Wallace*. The Office Action relies upon *Abe* for a teaching of an illuminator that is a floodlight and *Mizui* for the disclosure of a camera which measures the reflected light that is pulsed by a given source and the adjustment of the light as a function of the number of frames of the camera. See Office Action, page 6, paragraph 4; pages 6-7, paragraph 7. Neither of these references disclose calculating a difference among frames using a summation manner as claimed by Applicants.

Accordingly, independent claims 1, 7, 8 and 9 are distinguished over the applied references. Additionally, dependent claims 2 to 6 are distinguished over the applied references based at least on their dependency from independent claim 1.

In light of the above, the Applicants respectfully submit that all the pending claims are in condition for allowance; thus a timely Notice of Allowance is respectfully requested.

Respectfully submitted,

BELL, BOYD & LLOYD LLP

BY 

Thomas C. Basso
Reg. No. 46,541
Customer No. 29175

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